



[7590-01-P]

**NUCLEAR REGULATORY COMMISSION**

**10 CFR Part 72**

**[NRC-2014-0275]**

**RIN 3150-AJ52**

**List of Approved Spent Fuel Storage Casks: Holtec HI-STORM Flood/Wind System;  
Certificate of Compliance No. 1032, Amendment No. 1, Revision 1**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Direct final rule; confirmation of effective date.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is confirming the effective date of June 2, 2015, for the direct final rule that was published in the *Federal Register* on March 19, 2015. This direct final rule amended the NRC's spent fuel storage regulations by revising the Holtec International, Inc. (Holtec), HI-STORM Flood/Wind (FW) System listing within the "List of approved spent fuel storage casks" to add Amendment No. 1, Revision 1, to Certificate of Compliance (CoC) No. 1032. Amendment No. 1, Revision 1, allows these casks to accept 14X14B fuel assemblies with minor changes in the internal diameter of the fuel cladding, diameter of the fuel pellet, and spacing between the fuel pins. The amendment also updates testing requirements for the fabrication of Metamic HT neutron-absorbing structural material.

**DATES:** Effective date: The effective date of June 2, 2015, for the direct final rule published March 19, 2015 (80 FR 14291), is confirmed.

**ADDRESSES:** Please refer to Docket ID NRC-2014-0275 when contacting the NRC about the availability of information for this action. You may obtain publicly-available information related to this action by any of the following methods:

- **Federal Rulemaking Web site:** Go to <http://www.regulations.gov> and search for Docket ID NRC-2014-0275. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov). For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "ADAMS Public Documents" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov).

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O-1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

**FOR FURTHER INFORMATION CONTACT:** Robert D. MacDougall, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-5175; e-mail: [Robert.MacDougall@nrc.gov](mailto:Robert.MacDougall@nrc.gov).

## **SUPPLEMENTARY INFORMATION:**

### **I. Discussion.**

On March 19, 2015 (80 FR 14291), the NRC published a direct final rule amending its regulations in § 72.214 of Title 10 of the *Code of Federal Regulations* (10 CFR) by revising the Holtec HI-STORM FW System listing within the “List of approved spent fuel storage casks” to add Amendment No. 1, Revision 1, to CoC No. 1032. Amendment No. 1, Revision 1, allows these casks to accept 14X14B fuel assemblies with minor changes in the internal diameter of the fuel cladding, diameter of the fuel pellet, and spacing between the fuel pins. The amendment also updates testing requirements for the fabrication of Metamic HT neutron-absorbing structural material.

### **II. Public Comments on the Companion Proposed Rule.**

In the direct final rule, the NRC stated that if no significant adverse comments were received, the direct final rule would become effective on June 2, 2015. The NRC received eight public comments from private citizens on the companion proposed rule (80 FR 14332). Electronic copies of these comments can be obtained from the Federal rulemaking Web site, <http://www.regulations.gov>, by searching for Docket ID NRC-2014-0275. The comments also are available in ADAMS under Accession Nos. ML15113B266, ML15113B275, ML15141A021, ML15119A201, ML15119A206, ML15119A210, ML15119A214, and ML15119A230. For the reasons discussed in more detail in Section III, “Public Comment Analysis,” of this document, none of the comments received are considered significant adverse comments.

### **III. Public Comment Analysis.**

The NRC received eight comments from private citizens on the proposed rule, many raising multiple and overlapping issues. As explained in the March 19, 2015, direct final rule, the NRC would withdraw the direct final rule only if it received a “significant adverse comment.” This is a comment where the commenter explains why the rule would be inappropriate, including challenges to the rule’s underlying premise or approach, or would be ineffective or unacceptable without a change. A comment is adverse and significant if:

1) The comment opposes the rule and provides a reason sufficient to require a substantive response in a notice-and-comment process. For example, a substantive response is required when:

a) The comment causes the NRC staff to reevaluate (or reconsider) its position or conduct additional analysis;

b) The comment raises an issue serious enough to warrant a substantive response to clarify or complete the record; or

c) The comment raises a relevant issue that was not previously addressed or considered by the NRC staff.

2) The comment proposes a change or an addition to the rule, and it is apparent that the rule would be ineffective or unacceptable without incorporation of the change or addition.

3) The comment causes the NRC staff to make a change (other than editorial) to the rule, CoC, or technical specifications (TSs).

The NRC determined that none of the comments submitted on this direct final rule met any of these criteria. The comments either were already addressed by the NRC staff’s safety evaluation report (SER) (ADAMS Accession No. ML14276A620), were beyond the scope of this

rulemaking, or failed to provide a reason sufficient to require a substantive response in a notice-and-comment rulemaking. The NRC has not made any changes to the direct final rule as a result of the public comments. However, the NRC is taking this opportunity to respond to the individual comments to clarify information about the CoC rulemaking process.

For rulemakings amending or revising a CoC, the scope of the rulemaking is limited to the specific changes requested by the applicant in the request for the amendment or amendment revision. Therefore, comments about the system, or spent fuel storage in general, that are not applicable to the changes requested by the applicant are outside the scope of this rulemaking. Comments about details of the particular system that is the subject of the rulemaking, but that are not being addressed by the specific changes requested, have already been resolved in prior rulemakings. Persons who have questions or concerns about prior rulemakings and the resulting final rules may consider the NRC's process for petitions for rulemaking under 10 CFR 2.802. Additionally, safety concerns about any NRC-regulated activity may be reported to the NRC in accordance with the guidance posted on the NRC's public Web site at <http://www.nrc.gov/about-nrc/regulatory/allegations/safety-concern.html>. This Web site provides information on how to notify the NRC of emergency or non-emergency issues.

The NRC identified 12 overall issues raised in the comments, and the NRC's responses to these issues follow.

### **Issue 1: Stress Corrosion Cracking**

Multiple commenters raised the issue of the potential for premature failure of the multi-purpose canisters (MPCs) containing spent fuel within Holtec casks due to stress corrosion cracking (SCC) of the MPC's stainless steel walls. One commenter cited evidence that similar Holtec canisters at Diablo Canyon have already shown conditions for chloride-induced SCC

after having been loaded with fuel for only 2 years. Another commenter noted that thin-walled canisters like the Holtec design do not have American Society of Mechanical Engineers (ASME) certification and do not meet ASME standards. Another commenter asked whether the NRC's seismic analysis assumes that the MPC's ½ inch-thick walls remain intact. Still another commenter asked the NRC to specify the extent of cracking from SCC that would require replacement of an MPC to ensure that the spent fuel inside would remain protected in a large earthquake or tsunami and associated mud flooding event. Another commenter alleged that although there is no seismic rating for cracked spent fuel storage canisters, the NRC plans to allow up to a 75 percent crack in these canisters.

### **NRC Response**

These comments are not within the scope of this specific rulemaking. This rulemaking makes no changes to this system other than those identified in the revisions previously described. Other aspects of this system not identified in the revisions are not considered part of this rulemaking activity. These other aspects of the system were previously evaluated by the NRC as part of the original certification of the HI-STORM FW System dated March 28, 2011 (ADAMS Accession No. ML103020151). The NRC's evaluation and approval of the certification of the original HI-STORM FW System included an evaluation of the susceptibility to, and effects of, stress corrosion cracking and other corrosion mechanisms on safety-significant systems for spent nuclear fuel (SNF) dry cask storage (DCS) systems during an initial 20-year certification period. As indicated in the supporting SER for the original certification, the NRC staff determined that the HI-STORM FW System, when used within the requirements of the proposed CoC, will safely store SNF and prevent radiation releases and exposure in compliance with regulatory requirements. None of the revisions being made by this rule have any impact on the NRC staff's prior analysis in this area.

Regarding the ASME certification issue, the NRC's regulations in 10 CFR Part 72 do not

require DCS system canisters to be ASME-certified. However, the ASME Code requirements are often contained within the TSs that a general licensee is required to follow. As for the assertions that the NRC's "plans to allow up to a 75 percent crack in these canisters," and that there is evidence of potential cracking or failing of canisters at Diablo Canyon, the NRC has no such plan and is unaware of any such evidence. Importantly, general licensees (10 CFR Part 50 licensees that store spent fuel under a general 10 CFR Part 72 license) are required to have programs in place to monitor and address any such issues should they arise. For example, 10 CFR 72.122(h)(4) requires storage confinement systems to have the capability for continuous monitoring in a manner such that the licensee will be able to determine when corrective action needs to be taken to maintain safe storage conditions.

## **Issue 2: Inspection Challenges and Inspection Access**

Several commenters questioned the ability of the HI-STORM FW System to be adequately inspected and repaired if necessary during the initial certification period of 20 years, especially if the system is used in a coastal environment where SCC could be an issue.

On the issue of available methods for inspecting SCC, one commenter asserted that no technology exists to inspect adequately the exterior of thin welded canisters for cracks or other corrosion. The commenter said that the NRC is allowing vendors 5 years to develop an inspection method, but it will be limited, and the NRC plans to require inspection of only one canister per plant after 25 years and then the same canister at 5 years intervals. The commenter referred to an unnamed independent July 2010 report on the challenges and limitations of inspecting for SCC in stainless steel components other than loaded spent fuel dry storage canisters. The commenter asserted that no inspection method currently exists for loaded spent fuel dry storage canisters, and that the method recommended in the report as the most reliable is not possible with such canisters. Another commenter noted that if removal of

the canister is the only way to inspect the bottom of a canister that has been in contact with the bottom of the concrete well, it will be unlikely that each canister will be inspected for corrosion between the canister and its concrete well, if current NRC inspection schedules for dry storage casks are followed.

Concerned about the frequency and extent of inspections, a commenter noted the limited number of dry storage canisters that have been inspected to date, and expressed concern that there will be very few canister inspections, and probably only one, performed at each installation site, with the first inspection occurring 20 years after deployment. The commenter suggested that sites prone to ground water intrusion should have annual visual inspections of the bottom of each canister.

#### **NRC Response**

These comments are not within the scope of this specific rulemaking. This rulemaking is limited to the revisions previously described. Furthermore, the NRC has evaluated the design of the HI-STORM FW System in the initial certification of this system and determined that the design is robust, and contains numbers of layers of acceptable confinement systems in compliance with 10 CFR Part 72 requirements. In making this finding, the NRC staff evaluated the HI-STORM FW System to the specific overall requirements of 10 CFR 72.122. Additionally, the two canisters used in the HI-STORM FW System are the same as those used in the HI-STORM Underground Maximum Capacity (UMAX) Canister Storage System previously approved by the NRC (see 80 FR 12073, dated March 6, 2015). Therefore, a detailed evaluation of this MPC system is also documented in the NRC staff's SER for the HI-STORM UMAX System (ADAMS Accession No. ML14122A441). In that review, the NRC staff noted that the current technology does provide options for inspection if necessary.



### **Issue 3: Unavailability of Hot Cells or Spent Fuel Pools to Transfer or Store Spent Fuel from a Damaged Canister**

One commenter noted that no spent fuel storage cask has ever been opened and examined. Another pointed out that no “hot cells” (dry transfer systems) exist in the United States that are large enough to transfer spent fuel between canisters. Another asked how Holtec would handle the failure of a hypothetical 50 canisters after a major earthquake.

Yet another commenter expressed concern that the spent fuel pools at the decommissioning San Onofre Nuclear Generating Station (SONGS) will be demolished once the reactors’ spent fuel is in dry casks. Demolition of the spent fuel pools, the commenter wrote, would essentially negate the chances of repackaging any casks leaking radionuclides without another major construction effort to build a new storage pool. Another commenter wrote that a spent fuel storage pool is required to replace canisters and casks at any reactor site with spent fuel in dry storage, and that transporting cracked canisters to another facility with a pool presents numerous safety risks.

### **NRC Response**

These comments are not within the scope of this specific rulemaking. This rulemaking is limited to the specific revisions to Amendment No. 1 of the HI-STORM FW System. This rulemaking does not propose any change in the standards for approval of a CoC, or the requirements that govern use of the CoC by a general licensee. In 10 CFR Parts 50 and 72, the NRC places the responsibility for providing facilities necessary to perform spent fuel transfers between canisters, and store spent fuel removed from a damaged or defective MPC, with the 10 CFR Part 50 licensee, not the canister system manufacturer. Moreover, in its March 28, 2011, SER for the CoC for the original HI-STORM FW System, the NRC staff evaluated and found acceptable a key subsystem of the applicant’s storage system, the HI-TRAC Variable Weight

(VW) transfer cask, for its operability with hot cells. In the March 28, 2011, SER, the NRC staff stated that “[t]he HI-TRAC VW transfer cask also allows dry loading (or unloading) of SNF into the MPC in a hot cell.”

Finally, the NRC has not approved the demolition of the spent storage pools at SONGS. The decommissioning of the SONGS facility will be conducted pursuant to the NRC’s decommissioning regulations which include opportunities for public involvement. (See 10 CFR part 20, Subpart E; 10 CFR 50.75 and 50.82; 10 CFR 51.53 and 51.95). More information about the SONGS decommissioning activities can be found on the NRC’s public Web site at <http://www.nrc.gov/info-finder/reactor/songs/decommissioning-plans.html>.

#### **Issue 4: Seismic Protection**

Several comments raised concerns regarding the ability of this CoC system to withstand seismic events, particularly if the system were to be used at specific sites with known seismic activity, such as SONGS. There is also a question of whether the Holtec casks at issue have been fully tested to handle all United States seismic conditions, particularly those in California. One commenter contended that the NRC lacks information to support a sound determination on whether the casks could withstand the vertical and horizontal ground acceleration and significant ground displacement from a sizable earthquake on one of California’s known faults. Another commenter expressed a belief that the NRC has not adequately responded to concerns the U.S. Geological Survey pointed out in comments on the “Fukushima Lessons Learned” process.

#### **NRC Response**

These comments are not within the scope of this specific rulemaking. This rulemaking is limited to the specific revisions to Amendment No. 1 of the HI-STORM FW System. Additionally, as explained when the NRC addressed a similar comment about the ability of HI-

STORM casks to withstand seismic events during the UMAX System certification rulemaking, the certification provided by approval of the HI-STORM FW System does not, in and of itself, authorize use of this system at any specific site. Under 10 CFR 72.212(b)(5), before applying the changes authorized by an amended CoC and loading a cask, a general licensee wishing to use this cask system must perform written evaluations to establish, among other things, that:

- Cask storage pads and areas have been designed to adequately support the static and dynamic loads of the stored casks, considering potential amplification of earthquakes through soil-structure interaction, and soil liquefaction potential or other soil instability due to vibratory ground motion; and
- The independent spent fuel storage installation at the reactor site where the casks will be located will meet the requirements of 10 CFR 72.104 to ensure that radiation doses beyond the reactor's controlled area do not exceed 0.25 mSv (25 mrem) to the whole body, 0.75 mSv (75 mrem) to the thyroid and 0.25 mSv (25 mrem) to any other critical organ, and are further to controlled to a level as low as is reasonably achievable.

In addition, under 10 CFR 72.212(b)(6), before using the general license, the reactor licensee must review the Safety Analysis Report (SAR) referenced in the CoC or amended CoC and the NRC's SER evaluating the SAR to determine whether the reactor site parameters, including analyses of earthquake intensity and tornado missiles, are enveloped by the cask design bases considered in these reports.

The seismic design levels of the HI-STORM FW System as provided in Amendment No. 1, Revision 1, of this CoC are acceptable for most areas in the continental United States. For locations with potential for seismic activity beyond those analyzed for this system, additional NRC evaluations and certifications may be required before the system may be used in those locations. The NRC is currently evaluating another HI-STORM UMAX System amendment request that provides additional analysis intended to ensure the system's integrity during an

earthquake with higher seismic demands.

#### **Issue 5: Unacceptable Definition of “Undamaged”**

One commenter said that corrosion, pitting, and cracks cannot be considered undamaged.

#### **NRC Response**

This comment is not within the scope of this specific rulemaking. This rulemaking is limited to the specific revisions to Amendment No. 1 of the HI-STORM FW System. To the extent that the comment is intended to raise safety concerns with the change in the definition of damaged fuel, the definition would not be affected by this rulemaking and is therefore not within its scope. The purpose of the definition of damaged fuel is to identify conditions under which additional engineering measures are required to confine and secure the spent fuel before it can be loaded into a DCS system. The requirement to use these measures, which include isolating the affected spent fuel assembly in an additional container before loading it into an MPC, apply to all fuel assemblies, although the definition of “damaged” fuel may be revised to address calculated strengths or known weaknesses in a given assembly design. The NRC staff evaluated and found acceptable a proposed change in the definition of damaged fuel in the SER to CoC No. 1032, Amendment No. 1, dated December 17, 2014 (ADAMS Accession No. ML14351A475). The NRC staff evaluated the safety of this revision to CoC No. 1032, Amendment No. 1, in the SER dated March 13, 2015 (ADAMS Accession No. ML14276A620). No information is provided that would cause the NRC to change its conclusion regarding the safety of this change in the definition of damaged fuel as documented in the SER.

#### **Issue 6: How will Casks be Removed from Service?**

One commenter pointed out that for any cask placed into service during the final renewal term of a CoC, or during the remaining term of a CoC that was not renewed, the general license

for that cask must terminate after a storage period not to exceed the term specified by the cask's CoC, generally 20 years. The commenter further noted that when the general license expires, all casks subject to it must be removed from service. The commenter asked how a cask can be removed from service after its licensed service life of 20 years if the cask contains still-hot radioactive waste, given the fact that, according to Holtec's chief executive officer, its canisters are not capable of being repackaged.

### **NRC Response**

This comment is not within the scope of this specific rulemaking. This rulemaking is limited to the specific revisions to Amendment No. 1 of the HI-STORM FW System. The regulations governing the length of the CoC term, the standards for approval of a CoC, or the requirements that govern use of the CoC by a general licensee, are not within the changes proposed by this rule.

As to the specific comments, the NRC cannot verify the basis for comments attributed to Holtec's chief executive officer. Importantly, however, the NRC's regulations require that the systems be designed to allow for retrieval of spent fuel, and that the waste is packaged in a manner that allows handling and retrievability without the release of radioactive material above regulatory limits. (See 10 CFR 72.122(h)(5) and (l)). The HI-STORM FW System is designed to meet this requirement, and the NRC staff approved this design in its SER dated March 28, 2011 (ADAMS Package Accession No. ML103020135).

### **Issue 7: Inadequate Tsunami Analysis**

One commenter expressed concern about the NRC's process for certifying that the Holtec cask system will operate as designed after a tsunami. The commenter requested a detailed tsunami recovery procedure that should include a means to ensure that muds, salts, and other chemicals within the infiltrating tsunami water have not damaged the stainless steel

canister or reduced the DCS's longevity.

### **NRC Response**

This comment is not within the scope of this specific rulemaking. This rulemaking is limited to the specific revisions to Amendment No. 1 of the HI-STORM FW System. The NRC staff previously evaluated the impacts of flooding during the review of the initial certification for the HI-STORM FW System

In its March 28, 2011, SER (see Sections 4.8.2 and 7.3.1) for the initial certification of the HI-STORM FW System, the NRC staff considered both full and partial flooding for both the vertical and horizontal positions for the MPC. The NRC staff found that the fully flooded condition would produce the highest reactivity in the spent fuel, and that the fully flooded model for safety evaluations "is acceptable and applicable to all of the assembly configurations that are to be stored in the HISTORM FW MPC Storage system," including damaged fuel configurations.

In its March 28, 2011, SER, the NRC staff also noted the system's design measures to limit the rise in fuel cladding temperature under the most adverse flood event (one with a water level just high enough to block the MPC overpack's air convection inlet duct). The changes requested in this revision do not affect the NRC's prior flooding evaluation for the initial certification of this system.

### **Issue 8: High Burnup Fuel**

One commenter said that no vendor has addressed how a cask will handle high burnup fuel (HBF) cladding that may degrade shortly after dry storage. This commenter noted that HBF burns longer in the reactor, resulting in spent fuel more than twice as radioactive, hotter, and unpredictable in storage and transport. The commenter further asserted that HBF requires more years to cool in a reactor's spent fuel storage pool before it can be transported. This raises questions about the long-term acceptability of extended storage of HBF, according to the

commenter.

### **NRC Response**

The comment is not within the scope of this specific rulemaking. This rulemaking is limited to the specific revisions in Amendment No. 1 to the HISTORM FW System. In its March 28, 2011, SER for the original certification for the HI-STORM FW System, the NRC previously evaluated the acceptability of storing HBF during the system's initial 20-year certification term. The revision authorized by this direct final rule does not affect that original evaluation. Storage beyond the initial term of 20 years will require the applicant to submit a license renewal application. The application for that CoC renewal must include, among other things, a description of the Aging Management Programs for management of issues associated with aging that could adversely affect structures, systems, and components important to safety. (See 10 CFR 72.240(c)(3)).

### **Issue 9: Need for New Environmental Impact Statement (EIS)**

One commenter asked that the NRC do a full EIS evaluating the Holtec cask as one alternative, a German cask as another, and a French cask as a third, with possibly an additional alternative.

### **NRC Response**

This comment does not present information that would result in a determination that this revision requires an EIS, rather than an Environmental Assessment (EA). According to the National Environmental Policy Act (NEPA) and the NRC's regulations in 10 CFR Part 51, an EIS is only required if the action involves a major federal action significantly affecting the quality of the human environment. The NRC's regulations in 10 CFR Part 51 identify actions that require an EIS (see 10 CFR 51.20). Certificate of compliance rulemakings are not one of those actions. Instead, for CoC rulemakings, the NRC performs an EA to determine whether the action will

result in a significant environmental impact. If an EA determines that the action will result in a significant impact, the agency prepares an EIS. However, if the EA concludes with a “finding of no significant impact” (FONSI), an EIS does not need to be prepared.

As explained in the March 19, 2015, direct final rule, the EA regarding the revision to Amendment No. 1 of HI-STORM FW System, concluded with a FONSI and therefore, an EIS is not required for this action. This comment presents no new information or analysis that would justify reconsidering the agency’s FONSI determination.

#### **Issue 10: Metamic Fabrication Testing Requirements**

One commenter objected that Amendment No. 1, Revision 1, of the HI-STORM FW System CoC would remove fabrication testing requirements for the thermal expansion coefficient and thermal conductivity of Metamic HT neutron-absorbing structural material. The commenter noted that the justification for this change is that these properties have little variability when Metamic HT is fabricated according to the manufacturer’s manual. The commenter asked the NRC what it thinks testing is for if not to verify that the product has been made according to the specifications in the manufacturer’s manual.

#### **NRC Response**

This issue was addressed by the NRC staff in its SER, and the commenters do not raise any additional information that would alter the staff’s determination that the HI-STORM FW System, Amendment No. 1, Revision 1, casks, when used within the requirements of the proposed CoC, will safely store SNF. In its March 19, 2015, SER (ADAMS Accession No. ML14276A620), the NRC staff concluded that this was acceptable for this specific application. For a detailed discussion regarding the NRC staff’s evaluation, see Section 4 of the SER.



### **Issue 11: Exemptions**

One commenter contended that a general licensee seeking to load spent nuclear fuel into the Holtec HI-STORM FW System in accordance with the changes described in this rulemaking would have to request an exemption from the requirements of 10 CFR 72.212 and 72.214. Another commenter asserted that once Holtec has been given its original CoC, there should be no “exemptions.”

### **NRC Response**

The revisions to Amendment No. 1 of CoC 1032 for the HI-STORM FW System is to provide changes to the cask system so that general licensees do not need to request an exemption from any requirements of 10 CFR 72.212 or 10 CFR 72.214. Like all other proposed CoC amendments or revisions, the general licensee under 10 CFR 72.212(b)(5) will have to perform written evaluations which establish that the cask will conform to the terms, conditions, and specifications of a CoC or an amended CoC listed in § 72.214.

### **Issue 12: Reduced Circulation of Air for Cooling**

Two commenters objected that the proposed change in the HI-STORM FW System CoC would restrict the circulation of air for cooling spent fuel within the MPC or cask.

### **NRC Response**

The NRC staff evaluated this issue as part of its SER and concluded that there is no significant reduction in the cooling capacity of the HI-STORM FW System as a result of the revisions requested by the applicant. The NRC staff’s SER determined that CoC 1032, Amendment No. 1, Revision 1, casks, when used within the requirements of the CoC, will safely store SNF. The comment presents no information that the NRC has not already considered, or that would cause the NRC to change its analysis.

The purpose of the revision is to permit the more compact spent fuel assemblies now in some reactors' spent fuel storage pools to be loaded into the HI-STORM FW System for dry storage. In its March 19, 2015, SER (ADAMS Accession No. ML14276A620), the NRC staff found that approval of the application would permit a volumetric increase of 0.6 percent of the fuel and a reduction of 0.13 percent of the original flow area of the 14-rod-by-14-rod fuel assembly previously approved for use in this cask system. The NRC staff also found, however, that the reduced flow area through the 14x14B fuel assembly "is still larger than the 17x17 assembly flow area used as the bounding scenario in the thermal analysis. As a result, the flow resistance factor is still less restrictive than the one used in the bounding scenario, and the passive decay heat removal of the proposed 14x14B assembly is still conservative." The NRC staff also found that the spent fuel cladding "continues to be protected against degradation leading to gross ruptures under long-term storage by maintaining cladding temperatures below 752°F (400°C)," and "continues to be protected against degradation leading to gross ruptures under off-normal and accident conditions by maintaining cladding temperatures below 1058°F (570°C). Protection of the cladding against degradation is expected to allow ready retrieval of spent fuel for further processing or disposal."

Therefore, the NRC staff has concluded that the comments received on the companion proposed rule for the HI-STORM FW System, Amendment No. 1, Revision 1, are not significant

adverse comments as defined in NUREG-BR-0053, Revision 6, "United States Nuclear Regulatory Commission Regulations Handbook" (ADAMS Accession No. ML052720461). Therefore, this rule will become effective as scheduled.

Dated at Rockville, Maryland, this 27<sup>th</sup> day of May, 2015.

For the Nuclear Regulatory Commission.

Leslie Terry, Acting Chief,  
Rules, Announcements, and Directives Branch,  
Division of Administrative Services,  
Office of Administration.

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